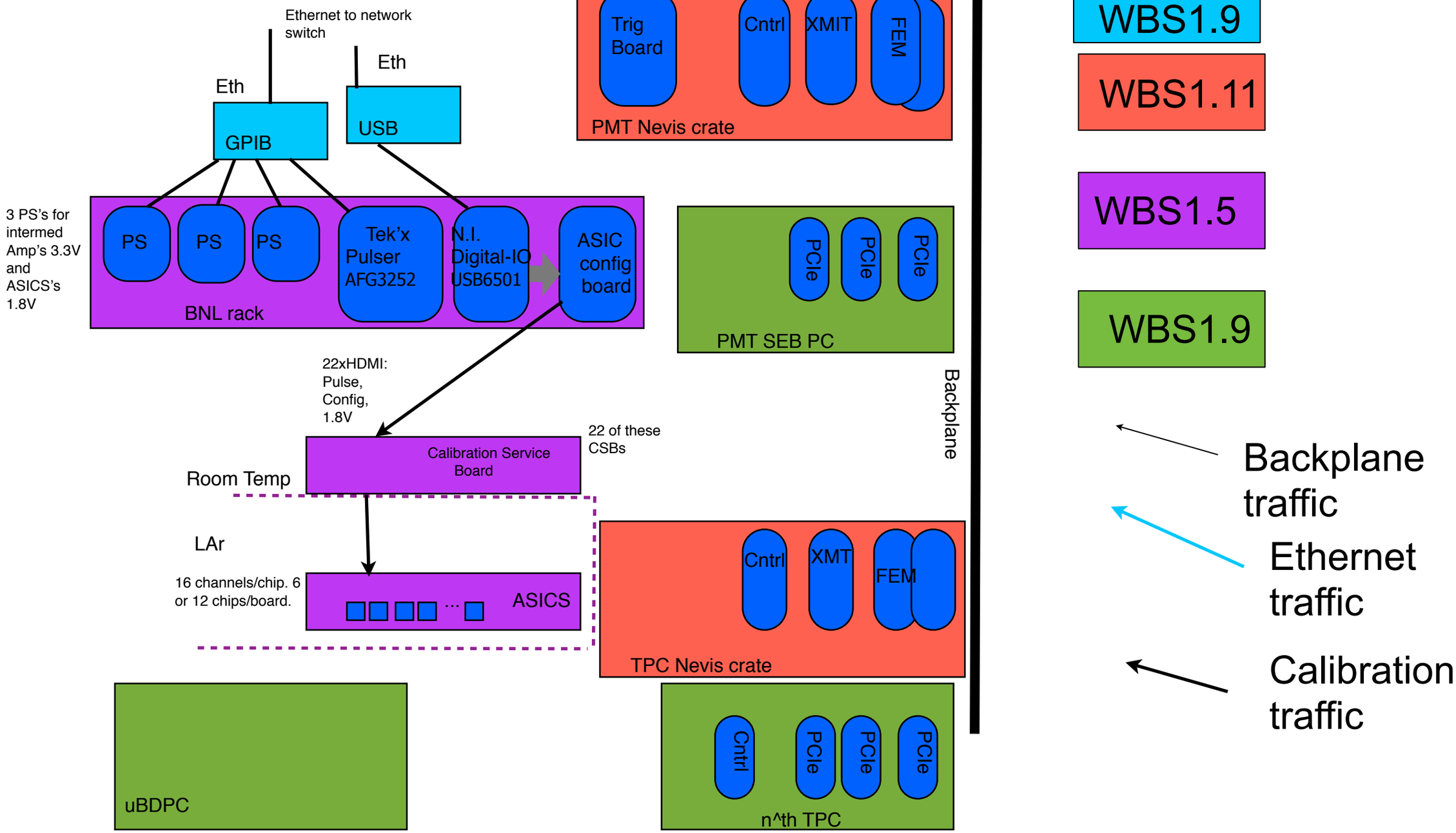
uBooNE Calibration



Probably WBS1.9

WBS1.11

WBS1.5

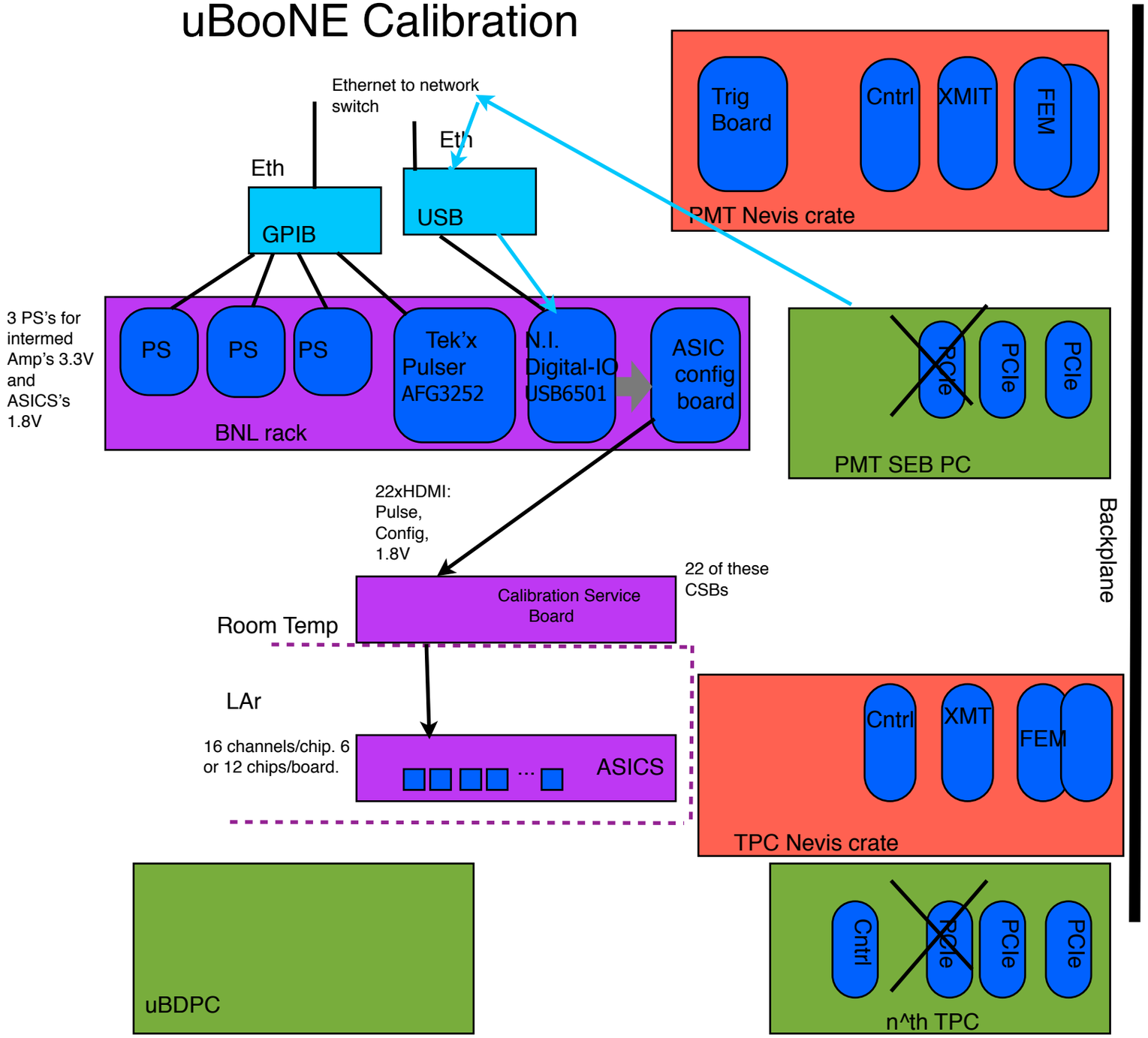
WBS1.9

Backplane traffic

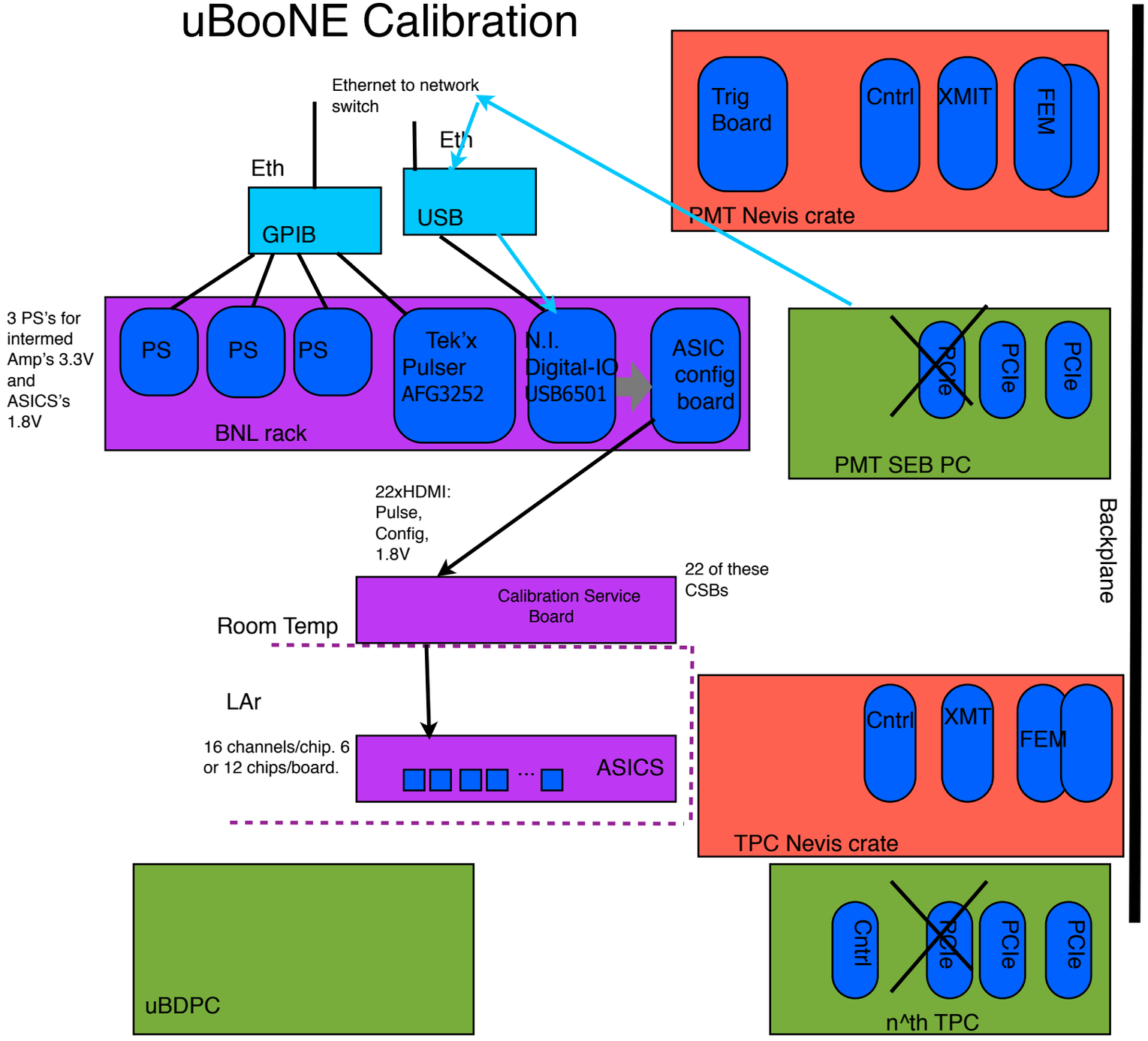
Ethernet traffic

Calibration traffic

uBooNE Calibration

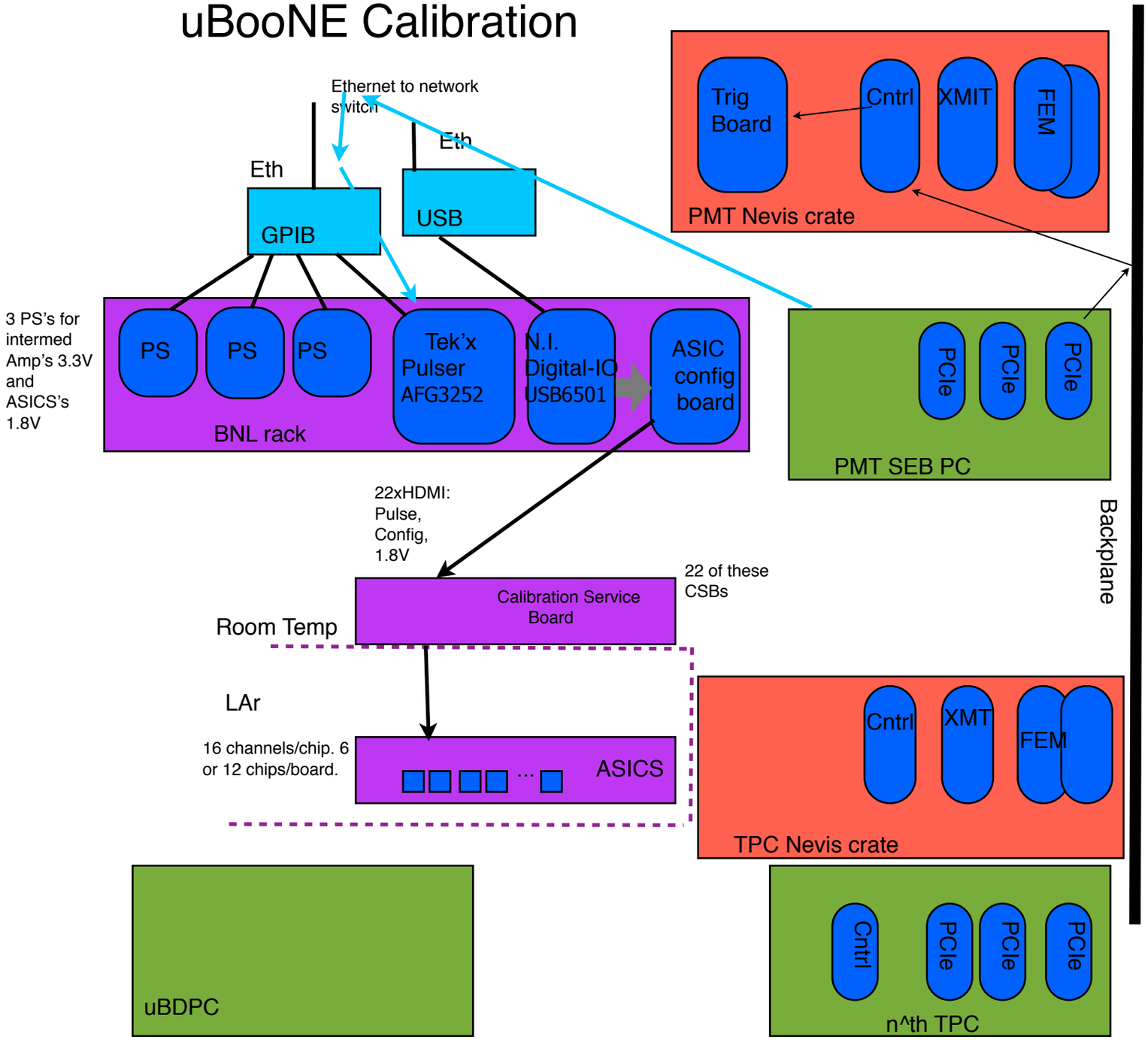


uBooNE Calibration

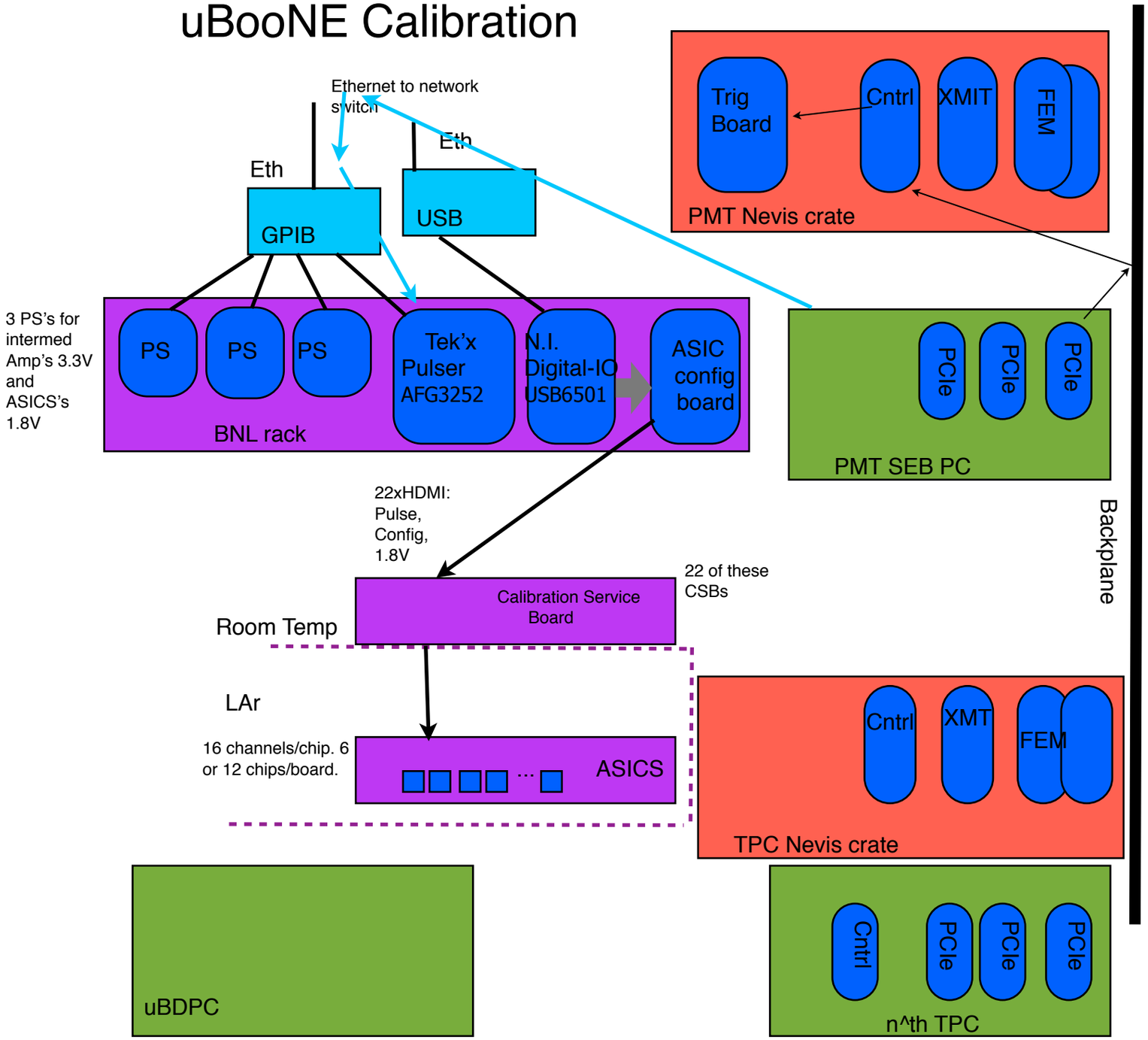


1.)uBDPC connects to all SEB PCs
2.) uBDPC tells PMTSEBPC we're doing a calibration run. Among other things, suspend the Supernova thread.
3.) PMTSEBPC Initializes CalibServBoard through NI digital IO unit and config board.
4.) PMTSEBPC Configs CalibServBoard (Pulse height, peaking time).
5-6.) Initialize, Setup TPCSEBPC Controller
7-8.) load SEBPC XMIT filepaths and parameters.
9-10.) load FEM FPGA , FEM parameters

uBooNE Calibration

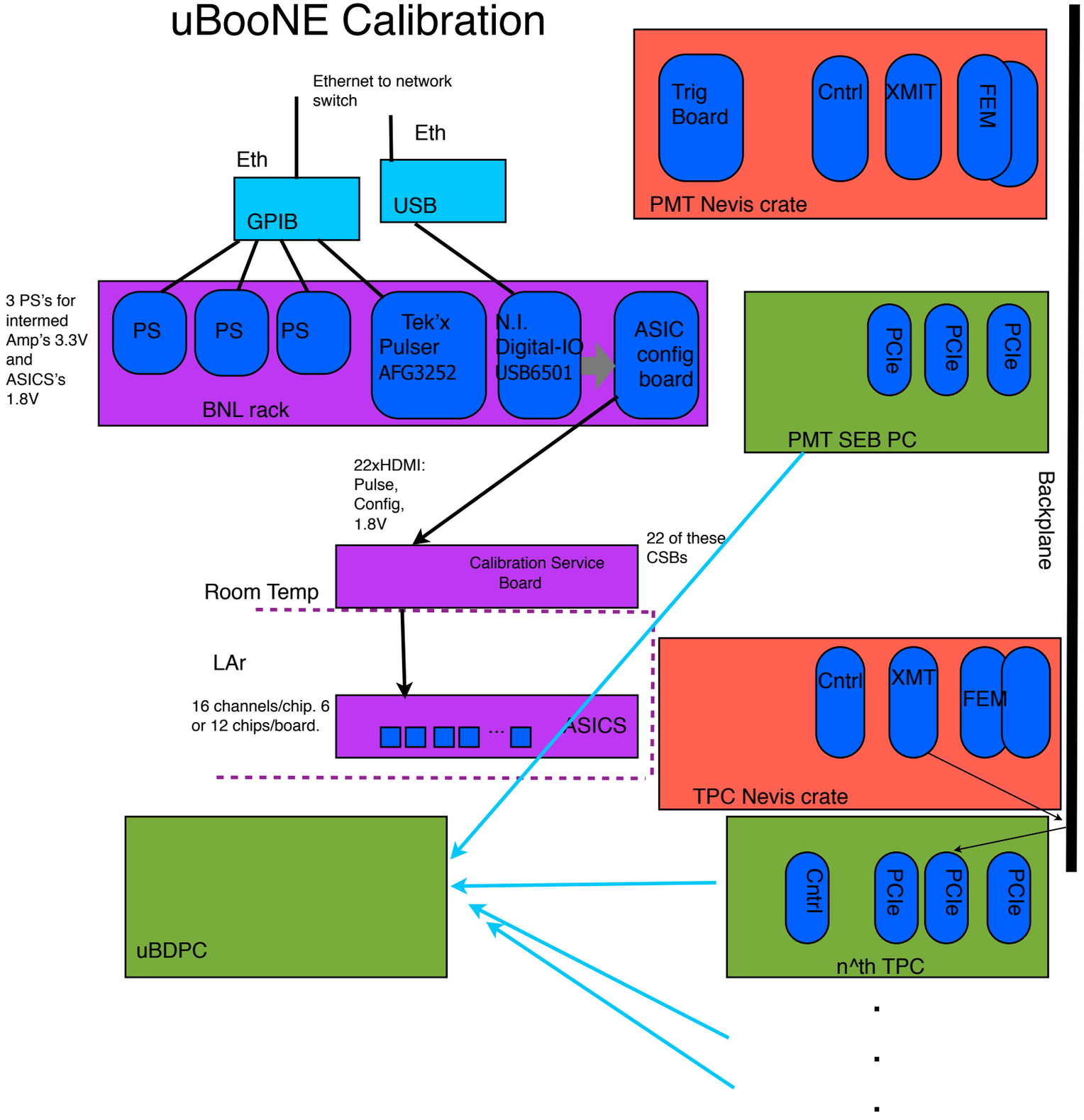


uBooNE Calibration

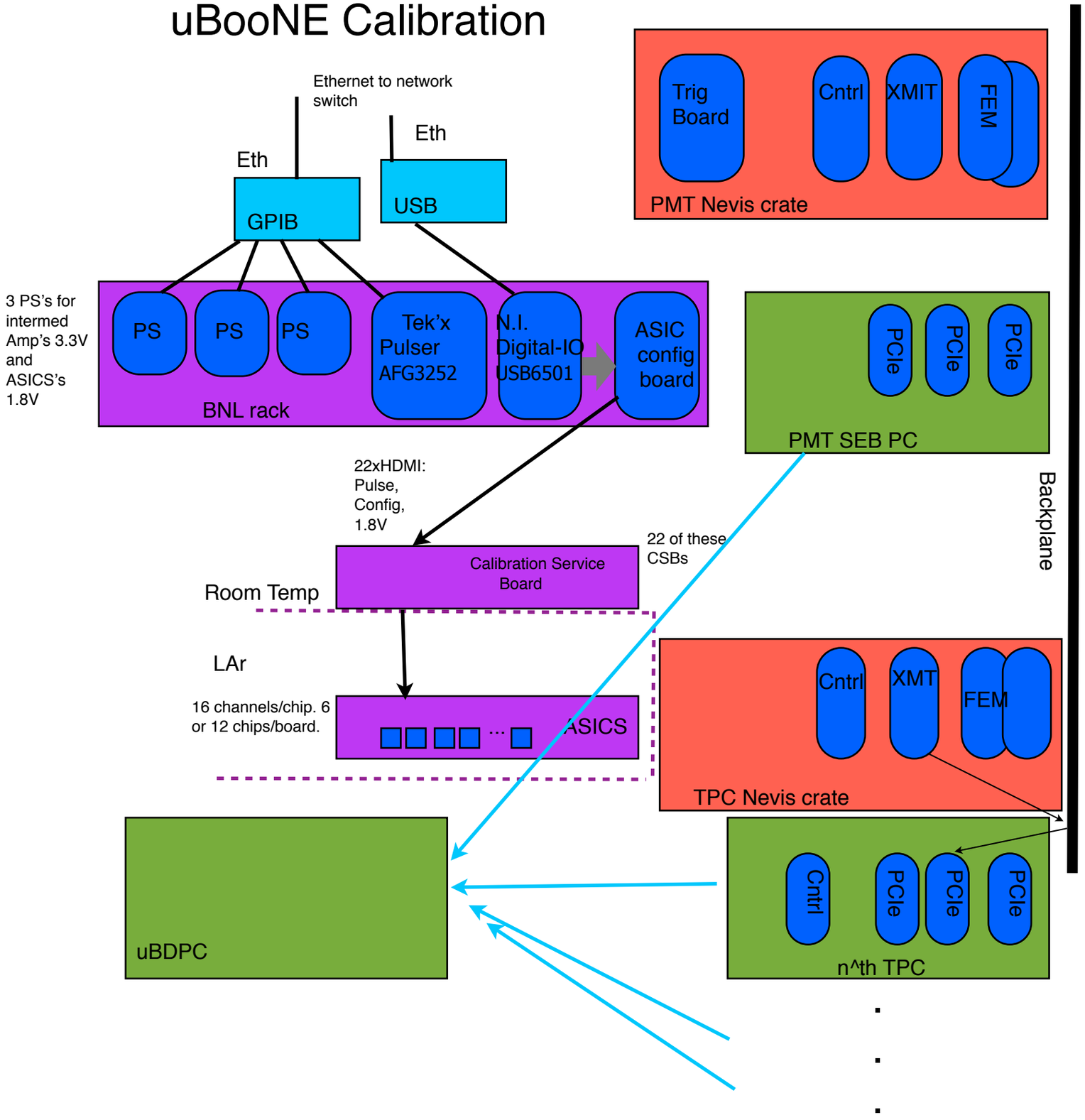


11.) setup XMIT PCIe DMA on all SEBPCs
12-13.) PMTSEBPC tells Tektronix Pulser via Ethernet to fire calibration pulse; Simultaneously, tell Trigger Board (via Cntrl Card) to set Calib Trigger bits. Perhaps also suppress all other triggers. This causes an event (3 x1.6 msec frames) at all crates.

uBooNE Calibration



uBooNE Calibration



14.) SEBPCs reading status always, now see a triggered event.
15.) This causes a DMA into all the SEBPCs' memory via the PCIe dedicated to the triggered data stream.

The SEBPCs tell Assembler running on uBDPC they have data.
Assembler sucks up those 4.8 msecs of data from everybody.
Compares PMTSEBPC's trigger info -- event number and full trigger word -- to event numbers of TPC/PMTdata.
Assembles event, writes it to disk.